

DOCUMENT RESUME

ED 371 447

EA 025 833

AUTHOR Addonizio, Michael
TITLE School Choice: Economic and Fiscal Perspectives.
Policy Report PR-B12.
INSTITUTION Indiana Univ., Bloomington. Education Policy
Center.
PUB DATE Apr 94
NOTE 33p.
AVAILABLE FROM Indiana Education Policy Center, School of Education
Office, Smith Center for Research in Education, Room
170, Indiana University, Bloomington, IN 47408-1698
(\$7.50).
PUB TYPE Reports - Evaluative/Feasibility (142)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Costs; Economic Impact; *Educational Benefits;
*Educational Finance; Elementary Secondary Education;
*Evaluation Criteria; Private School Aid; *Program
Evaluation; *School Choice

ABSTRACT

This paper applies economic concepts to several school choice issues, identifying various market and public school choice proposals as alternative mechanisms for generating and redistributing the economic benefits of education. Private benefits redound directly to those educated or their parents; external, or public, benefits redound to other members of society. The criterion for evaluating choice proposals is their potential to maximize combined private and external benefits. Successful school choice schemes must consider numerous factors that may increase the overall cost of publicly supported education, including costs necessary to: (1) increase parents' ability to take advantage of choice programs; (2) increase schools' diversification or improvement; (3) support the education of privately educated students and expand these students' education program to include public educational benefits; and (4) decrease school size. Finally, a successful school choice program may require significant modifications of the school finance system. General school funds should be distributed according to real school choice cost effects, including those on personnel and overhead. Taxation systems should be modified to ensure that sufficient public benefits of education are provided and that parents and taxpayers have appropriate control over the amount and kind of private benefits delivered. Categorical funding programs' purposes should be clarified to distinguish between programs primarily benefiting the child and those primarily benefiting the school. An executive summary is included. (Contains 27 references.) (MLH)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

School Choice: Economic and Fiscal Perspectives

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as
received from the person or organization
originating it.

☐ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

M. McCarthy

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

About the Center

The Indiana Education Policy Center provides nonpartisan research, information, and communication on education issues to Indiana policymakers and educators to improve education in the state.

The Center has offices on two Indiana University campuses. One office is located in the School of Education on the Indiana University Bloomington campus. The other is located in the School of Public and Environmental Affairs at Indiana University-Purdue University Indianapolis.

This report was produced by the School of Education Office.

The views expressed in this publication are those of the author and do not necessarily represent the positions of the Indiana Education Policy Center or its funders, the Lilly Endowment Inc. and Indiana University.

**School Choice:
Economic
and
Fiscal Perspectives**

by Michael Addonizio

© 1994 *Indiana Education Policy Center*
Policy Report PR-B12
April 1994

Michael Addonizio
is Assistant Superintendent for Research,
Planning, and Policy Development
at the Michigan Department of Education.
He received his Ph.D. in economics from Michigan
State University and has published widely
in the area of education finance. His research interests
include fiscal federalism, the economics of
education, and public school finance.

The author gratefully acknowledges the helpful comments
of James Phelps, Gary Wolfram, and Mark Buechler
and the research assistance of Jim Spillane.
Barry Bull offered especially helpful suggestions
on the next to last draft.
This report does not necessarily reflect
the views of these individuals.

CONTENTS

Executive Summary	iii
I. Economic Perspectives on School Choice	1
Alternative Supply Mechanisms: The Case for School Choice	3
Market Choice	4
Public Choice	5
Choosing a Supply Mechanism	7
II. Costs of School Choice	7
System Operating Costs	8
Demand-Side Supports	8
Supply-Side Incentives for Educational Entrepreneurship	10
Costs of Instruction	12
Choice and Aggregate Public Educational Expenditures	12
Costs of Smaller Schools	13
III. School Finance Issues under School Choice	13
General Funding Distribution Issues	14
Taxation Issues	16
Categorical Funding Issues	18
A Final Word	19
References	21

EXECUTIVE SUMMARY

This paper applies economic concepts to a variety of issues of school choice. It identifies various market and public school choice proposals as alternative mechanisms for generating and distributing the economic benefits of education, benefits that redound directly to those who are educated or their parents (private benefits) and benefits that redound to other members of society (external, or public, benefits). From this perspective, the criterion that ought to be used to evaluate any specific choice proposal is whether it has the potential to maximize combined private and external benefits.

A successful scheme of school choice must take into account a number of additional cost factors, which in total may increase the overall cost of publicly supported education:

- costs necessary to increase parents' ability to take advantage of the choice program, such as information and transportation systems;
- costs necessary to increase the diversification and improvement of schools, such as incentives for the development of charter schools or for school restructuring;
- costs associated with the public support of the education of students now educated by private schools and with the expansion of the education program for such students to include the public benefits of education; and
- costs associated with decreasing the size of schools.

Finally, a successful school choice program is likely to require significant modifications of the school finance system, modifications that go well beyond simply having public funds follow students to their schools of choice:

- General school funds should be distributed on the basis of the real cost effect of school choice, including effects on personnel and overhead costs.
- Taxation systems should be modified to ensure that sufficient public benefits of education are provided and that parents and taxpayers have appropriate control over the amount and kind of private benefits delivered.
- The purposes of categorical funding programs should be clarified to distinguish between those programs in which the child is the prime beneficiary (for which funding should follow the child to the school of choice) and those programs in which the school is the prime beneficiary (for which funding should not follow the child).

SCHOOL CHOICE: ECONOMIC AND FISCAL PERSPECTIVES

One of the more important developments in elementary and secondary education policy in recent years has been the emergence of choice as an idea in good standing. In view of the popular rejection of vouchers and tuition tax credits during the late 1970s and early 1980s, the current emphasis on choice is somewhat surprising. We are, however, a society that attaches great importance to individual choice, so it is perhaps more surprising that we have endured so long a system of public education that substantially limits choice, not only of school building, but of curriculum and school schedule. The new interest in choice is also driven by growing concern over the quality of our public schools, particularly in our urban centers.

One can argue that the present organization of education with its 16,000 local districts, 84,000 public schools, and 28,000 private schools already provides considerable choice to those able to live in the neighborhood of their choosing or send their children to a private school. However, many families cannot afford to exercise such choice and must rely on new forms of choice to improve their educational opportunities. These new forms of choice can become available to the public only by government action.

To date, much of the discussion of these new forms of school choice has focused on politics and public opinion. The purpose of this paper is to show how the concepts and research of economists can help provide criteria for making decisions about school choice proposals and can help analyze the resources necessary to make those proposals work as intended. To this end, this paper includes three parts. The first part presents basic economic perspectives on school choice, the second considers the potential financial costs of school choice, and the third considers several issues related to school finance under choice.

I. ECONOMIC PERSPECTIVES ON SCHOOL CHOICE

Modern economics provides a special perspective on public policy, one that focuses on how well alternative policies on the whole satisfy citizens' desires for a good life. From this perspective, decisions about school choice proposals are concerned with how government can most effectively exert its influence over the supply and consumption of education to satisfy its citizens' desires. This section explains how

economists view the debate over school choice and what criteria they might use to resolve that debate.

According to one generally accepted definition, economics is the study of the ways in which scarce resources are allocated among alternative uses to satisfy human wants. While resources are conveniently classified into labor, capital, and land, the variety of economic goods and services produced with these resources is virtually limitless. Among these economic goods is education, which satisfies human wants in two general ways. First, education provides consumers with skills and knowledge that directly benefit those consumers either by satisfying their immediate desires for intellectual facility and cultural appreciation or by increasing their human capital and, thus, their power to earn goods that satisfy other desires. Second, education also provides consumers with values and knowledge that enhance their ability to participate effectively in democratic society, a result that does not necessarily satisfy desires of those consumers themselves but that is of benefit to other members of the society.

Because of this second factor, education is said in the lexicon of microeconomics to create a "positive externality," a benefit that would be overlooked in the market by direct consumers when making their decisions about how much education to consume. That is, to the extent that

my consumption of education will likely increase my income and enhance my quality of life, it is a private good that can be efficiently supplied (i.e., supplied in the correct quantity at the lowest cost) and allocated in the private market. I would purchase education up to the point at which the cost of the last unit of education exactly equalled the private benefit I derive from consuming it. My personal calculus, however, would not take into account the benefits of my education that would accrue to others.

The dual nature of education, providing both private and external benefits, has important implications for its supply, that is, its production and distribution. Supplying education entirely in a private market would be problematic because the positive externality would lead to the production of too little education. Since consumers do not capture all the benefits of the consumption of education, they will in a wholly private market demand less than the socially optimal amount. At any given market price, too little education would be demanded and therefore produced. This conclusion suggests a role for government in the allocation of education. For government can potentially take into account all educational benefits, private and external, and either by coercion or by influencing the price of education ensure that the optimal amount of education from society's viewpoint is consumed.¹ In the U.S. today, government

¹ Another line of reasoning explaining the public supply of education is provided by Brown (1992). Brown begins with the observation that most schools, whether public or private, look substantially alike because they are responding to consumers' concerns over the uncertainty about students' ability and future employment prospects. In the face of this uncertainty, virtually all schools provide a full range of so-called primary school services, those services that affect the productivity of students. Such services consist of instruction in traditional academic subjects as well as vocational training, music, art, and athletics. Brown characterizes the result as "comprehensive uniformity" that caters to a variety of interests and tastes. The schools act as insurance companies by protecting students from the risk of choosing a narrow curriculum. Brown then argues that nonprofit schools (either public or private) enjoy an advantage over for-profit schools in the supply of primary school services because they have less incentive to scrimp on service levels. Finally, Brown cites research suggesting that public provision of comprehensive education is preferable to private nonprofit provision for reasons of accountability and cost.

exercises this influence over elementary and secondary education by requiring children to attend school, by providing public education free of charge, and by permitting those who want and can afford to send their children to private schools to do so at their own expense. From an economic perspective, the argument over school choice, then, can be seen as a debate over whether the current mechanism for allocating education is efficient, that is, whether it produces the greatest amount of private and external benefits for the lowest cost.

Alternative Supply Mechanisms: The Case for School Choice

Advocates of increased choice in education often emphasize the private, rather than external, benefits of education. Such advocates generally hold the view that families should be able to choose the school that best fits the specific educational needs of their children. Further, they often make the economic argument that choice among schools will lead to greater competition for students and improvements in school efficiency with respect to student achievement. This argument is predicated on the view that public schools essentially enjoy a monopoly over students living in their attendance areas and that monopolies, protected as they are from competition, do not use resources efficiently.²

In response to the growing interest in school choice, a number of choice models have been devised. These models differ basically in the

degree of freedom families may exercise in choosing the type and amount of education their children will receive. The debate over the degree to which educational choice should be restricted arises from the dual purpose of education: private and external benefit. Families choose educational programs for their children on the basis of their own tastes and judgment. However, in addition to meeting the private preferences and needs of individuals and their families, schools also provide students with a common set of values and knowledge to develop citizens who can participate effectively in democratic society. The thesis that schools should contribute to equality of social, economic, and political opportunities among people of differing racial and socioeconomic origins suggests that all students be exposed to a common educational experience that ought not be left to the vagaries of individual or family preferences (Levin, 1991).

Systems of educational choice, therefore, must seek a balance between parents' right to choose the influences and values to which their children will be exposed and the right of a democratic society to use the educational system to foster its most essential political, economic, and social institutions. Generally, two alternative approaches have emerged from attempts to preserve a common educational experience while allowing some range of choice: a market system of private choices such as those provided by education vouchers or tuition tax credits and a system of public choice among schools that are sponsored or endorsed by government (Levin, 1991).

² According to microeconomic theory, monopolies produce too little output and sell it at too high a price. That is, a competitive market would produce more than would a monopoly and would sell at a lower price. With regard to education, advocates of unfettered choice argue that market competition would produce a broader array of educational programs at a lower cost.

Market Choice. The most general form of market choice is the voucher system, which creates an educational market for all families, including those with little or no tax liability.³ The state's role in a voucher system would be threefold:

- *Finance*—To provide funds in the form of educational vouchers for all school-age children;
- *Regulation*—To establish criteria for eligibility of schools to receive and redeem vouchers;
- *Access*—To improve access to the educational market by providing information and other services to parents, resolving disputes between schools and parents, and ensuring that all children are enrolled in an approved school.

Specific voucher programs differ along these three dimensions of finance, regulation, and access (Levin, 1980). The financing of voucher systems may vary in the size of the voucher, the opportunity for a school to charge more than the voucher amount or to obtain additional revenue through gifts, and the source of funds. Particular resolutions of these issues

will have different effects on families' abilities to choose among alternative educational programs. For example, the ability of schools to charge tuition in excess of the voucher amount could increase segregation by economic class, and probably also by race. Alternatively, larger vouchers could be provided to children in poor families to compensate for the lack of educational resources in the home.⁴ Voucher levels could also be differentiated by grade level, by programmatic need (e.g., bilingualism or disability), regional cost variations, or other social priorities.

One interesting variation on financing vouchers was a California state constitutional initiative proposed by Coons and Sugarman (1978). In this modified voucher plan, several expenditure levels would be available within a community's schools. Each family could choose the expenditure level (a proxy for school quality) it most preferred and would be taxed at a corresponding rate. Put another way, this approach would allow individual households a choice of educational tax rate and guarantee an expenditure level commensurate with that rate.

Voucher plans also differ in the provisions that they make for regulating participating schools and services to enhance access to the market. For instance, the system could provide elaborate transportation and information ser-

³ The "voucher plan" was first proposed by Milton Friedman (1955). Friedman described his plan thus:

Governments could require a minimum level of education which they could finance by giving parents vouchers redeemable for a specified maximum sum per child if spent on "approved" educational service. Parents would then be free to spend this sum and any additional sum on purchasing educational services from an "approved" institution of their own choice. The educational services could be rendered by private enterprises operated for profit, or by nonprofit institutions of various kinds. The role of the government would be limited to assuring that the schools met certain minimum standards such as the inclusion of a minimum common content in their program, as it now inspects restaurants to assure that they maintain minimum sanitary standards. (pp. 127-128)

⁴ Such a plan was promoted for several years during the 1960s and early 1970s by the Office of Economic Opportunity and the U.S. Office of Education in an experiment in the Alum Rock School District, near San Jose, California, involving only public schools.

vices and regulate the admissions process to ensure the participation of children from low-income families. Or the system could adopt a more laissez-faire approach, with a meager information system, no transportation, and an entirely unregulated admissions process. Clearly, the financial and administrative implications of voucher systems may vary dramatically with the form of system adopted. As we will see in the second part of this report, these variations have considerable implications for the costs of market choice plans.

While market choice in education appears to enjoy growing political support (for example, market choice proposals have been considered by legislatures in at least 13 states), no statewide voucher plans have yet been adopted.⁵ In 1990, Oregon voters rejected a voucher initiative by a wide margin. In 1992, Colorado voters turned down a citizen initiative that would have provided parents with vouchers worth up to \$2,500 to send their children to either private or parochial school or educate their children at home. And in 1993, California voters defeated by a margin of greater than two to one a voucher initiative that would have granted all California students requesting it a voucher equal to at least 50% of state and local per-pupil expenditures, redeemable at any nonpublic school or participating public school.

Passed by state lawmakers in 1990, the Milwaukee Parental Choice Program is the nation's only school choice plan that allows elementary and secondary school children to attend private school at taxpayer expense. The

program provides each participating school with approximately \$2,600 per student. The scope of the Milwaukee plan is severely limited in several ways. First, participation is restricted to just 1% of the enrollment in the Milwaukee Public Schools. Second, participating pupils must be from families whose income does not exceed 175% of the poverty level. Third, voucher students must not exceed 49% of the students in any participating school. Fourth, voucher schools must accept all voucher-carrying students as long as space is available. If the number of voucher students exceeds available space, participants are selected by lot with siblings receiving some preference. Fifth, participating schools do not receive additional funds for learning-disabled or emotionally disturbed pupils. In view of these limitations, it is difficult to characterize the Milwaukee voucher program as a true market program.

Because experience with voucher systems has been so limited, it is difficult to assess the claims of proponents and opponents of these plans using hard evidence. Much of the debate about the economic merits of these plans remains in the realm of economic theory.

Public Choice. An alternative to market choice is public choice, which also can take a variety of forms. However, unlike market choice, a public choice system consists exclusively of government-sponsored schools. That is, each school would be either a government-operated public school or a private provider or charter school regulated by government through con-

⁵ In a 1991 Gallup poll of the American people, about half of the respondents expressed support for vouchers, while 39% were opposed and 11% uncertain. Support for vouchers was especially high among minorities (57%), nonpublic school parents (66%), and inner-city residents (57%). See Elam, Rose, & Gallup (1991). In a similar 1992 Gallup poll, 70% of the respondents said they would support a government voucher plan that includes public, private, and parochial schools. See Lawton (1992). However, in a 1993 Gallup poll, 74% of the respondents said they did not favor allowing students to attend a private school at public expense. See Elam, Rose, & Gallup (1993).

tract. In either case, all students would be provided a common core of educational experiences based upon the social aims of public education. The object of public choice is to establish a common core educational experience for all while allowing schools freedom in the way the core is delivered and supplemented.

Under public choice, the content of the core educational program is determined by the electorate. This core may entail curriculum requirements, school organization and student grouping, instructional strategies, and the professional qualifications of teachers and other school personnel (Levin, 1991). The common core would emphasize education as an economic good, providing social benefits beyond the private benefits accruing to students and their families. One argument for public, as opposed to market, choice rests in part upon a concern that private schools may fail to offer the common core of democratic schooling, even if redemption of a voucher were conditioned upon such a requirement.

A number of models have been advanced to expand parental choice among government-sponsored schools, including choice of public school within one's district of residence, choice of public school in any district, more restricted choice models such as second chance programs for students who have difficulty in their assigned public school, and postsecondary options allowing high school students to enroll in college courses as part of their high school program. Magnet school systems, one of the earliest forms of public school choice often established in conjunction with desegregation

orders in an attempt to keep middle class whites from fleeing urban school systems, are now used as much to provide educational choices as they are to promote integration. Alternatively, a public school may contract with a private firm to provide educational services.⁶

A more recent innovation to create more options within a system of public choice is the charter school. In very general terms, a charter school enjoys the operational autonomy of a private school while being held accountable to a public authority (Williams & Buechler, 1993). A charter school is a public school organized by educators, parents, or others (e.g., a university or community college, or any nonprofit organization) and sponsored by a publicly elected body, such as a local school board, a state board of education, the elected governing board of a public postsecondary institution, or a city council (for specific models, see Chubb & Moe, 1990; Kolderie, 1992). The school is formed as a legally separate nonprofit or cooperative organization. The public status of the school would stem from its nonsectarian character and open admission policy. A charter school is a "school of choice," with no prescribed local service population and no local property tax base. All attenders would be "active choosers" in that all would select the charter school and no one would be compelled to attend. As such, a charter school would tend to blur the distinction between market and public choice. At the time of this writing, eight states have adopted charter school laws, including California, Colorado, Georgia, Massachusetts, Michigan, Minnesota, New Mexico, and Wisconsin.

⁶ Performance contracting was largely discredited in the 1960s amid press accusations of widespread contractor cheating, whereby instructors would leak exam questions to students prior to formal examination. Further, an experiment in the early 1970s sponsored by the Office of Economic Opportunity (OEO) showed disappointing results (Gramlich & Koshel, 1975).

Choosing a Supply Mechanism

From an economic perspective, the various market and public choice models vary along two dimensions. One dimension is the scope of allowable choice, with the extremes being the theoretically unfettered market choice afforded by a pure voucher program and the limited choice provided by a government monopoly on public education. However, economic theory does not teach that there is anything inherently preferable about a more or less market-oriented system. The second, and more relevant, dimension of difference is the degree to which the educational system maximizes private and public (external) benefits. In evaluating choice proposals, the critical issue from an economic point of view is whether the alternatives under consideration do a better job than the current system in generating the highest possible levels of these two sorts of economic benefits. From this standpoint, two general issues arise. First, an educational delivery system may generate the wrong mix of private and public benefits. For example, proponents of increased choice criticize the current system for failing to allow parents to adequately customize their children's education. At the same time, critics of choice believe that some parents, in seeking such customization for economic or religious reasons, may reject the public's legitimate interest in fostering a common core of citizenship values. Second, an educational delivery system may generate the wrong mix of the various public interests in education. For example, one may argue that the public interest in high quality education has been sacrificed for a rigid uniformity among today's public schools. Conversely, one may argue that a system of choice may emphasize educational diversity at the expense of the public's legitimate interest that educational oppor-

tunities be distributed equally regardless of race, ethnic group, or gender.

Whether a choice proposal meets these economic criteria cannot be fully evaluated in the abstract. Rather, each individual proposal must be considered in concrete detail for its potential to enhance the sum and balance of private and public benefits. Because our society's experience with school choice is limited and because hard evidence about the various proposals is difficult to obtain, the economic evaluation of choice plans is inevitably uncertain and speculative. To provide only one recent example, economists estimated that the proposed California voucher system could "increase the resources available for each public school pupil by 7% . . . or cut those resources by 18%" (Olson, 1993). Although economics can provide a conceptual framework for evaluating school choice, the limited evidence for applying that framework means that much of the economic debate about choice will remain theoretical for the immediate future.

II. COSTS OF SCHOOL CHOICE

The introduction of greater choice in elementary and secondary education will involve costs associated with the creation of a "mixed" educational system driven in part by market forces and in part by government regulation. In order for this mixed system to maximize the private and public benefits of education, policymakers need to consider two potential areas of cost—the costs of operating the choice system effectively and the additional costs of instruction that a successful choice system may generate.

System Operating Costs

As policymakers consider enacting school choice plans, they will need to understand what sort of expenditures may be necessary to make such a plan work as intended. The arguments in favor of choice assume that a reasonable number of parents are willing to take advantage of the program, enough to encourage schools to compete for students on the basis of quality and diversity of instructional programs. In other words, for choice to work, there must be sufficient demand from parents. Similarly, the arguments for choice assume that schools will have the capacity to improve and diversify their educational programs so that parents will have an incentive to choose a school for their children. Here, there must be a sufficient supply of schools worth choosing. However, these assumptions will not necessarily come true by themselves. Evidence from statewide choice programs in Minnesota and Massachusetts, for example, suggest that relatively few parents (as few as 5%) actually take advantage of their right to choose. This may be too small a percentage to stimulate the response from schools that choice advocates anticipate. In short, the prospective loss of the children of a few disgruntled parents may not be sufficient incentive for most schools to engage in the work needed to dramatically improve and diversify their instructional programs. Furthermore, current school personnel may not have the time, energy, or ideas necessary to make such dramatic changes. The choice programs in East Harlem, New York, and Cambridge, Massachusetts, widely regarded as among the most successful choice efforts, provided time and assistance to teachers to enable them to redesign their programs. Thus, policymakers need to consider the potential costs associated with stimulating demand for

and supply of schools of choice in order to ensure that a choice program will have the results intended. This section discusses the types of costs that may be incurred to enhance demand and supply.

Demand-Side Supports. Regardless of the model chosen, choice programs require support systems in order to succeed. The first is a school-based information system. A well-known axiom of economics is that the efficiency of market systems depends crucially upon consumers' knowledge of alternatives. In theory, the perfectly competitive market assumes the existence of perfect knowledge of all pertinent information for potential consumers and producers. In fact, all markets, including markets for educational services, have to contend with the problem of advertising and promotional distortions. But in addition to regulating promotional activity by the schools, states could incur substantial costs in establishing and maintaining an up-to-date information system that is understandable and accessible to potential producers and consumers. Information needs of disadvantaged populations are particularly acute. Such people may be poorly educated, non-English-speaking, or relatively transient because of lack of housing and stable employment. An effective information program would likely include bilingual counseling services and would have a decentralized structure.

Parents will need school-level information on curriculum, instructional philosophy, and student outcomes in order to make informed choices. Since most statewide education information systems are organized at the district, rather than building, level, states or school districts will need to invest additional resources in developing and maintaining a school-based information system. Further, school districts will need to augment the information system

with counseling services to respond to parent inquiries.

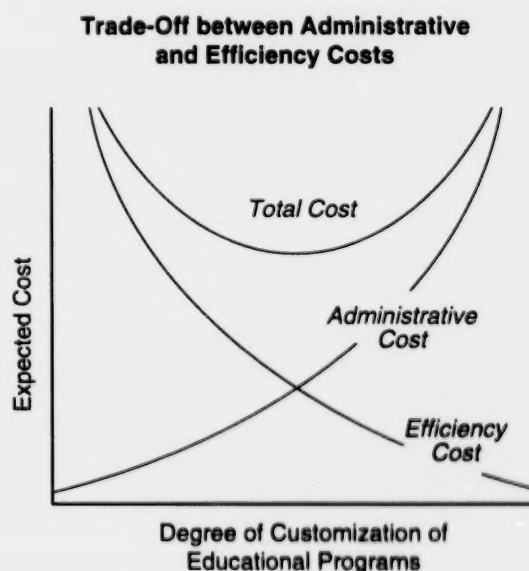
Similarly, either market or public choice programs will need to consider the cost of additional transportation that might be needed to encourage parent participation. Of course, many school districts already transport a large share of their students. But choice plans are likely to involve far more complex patterns of student movement than are required by the typical school district's geographic attendance zones. Without such services, many parents are likely to be unwilling or unable to take advantage of the right to choose their children's school.

Ironically, a system of market choice, generally viewed as a more laissez-faire approach than public choice, would arguably require greater administrative support (Levin, 1991). For example, a market choice based on vouchers would require a regulatory structure to ensure eligibility of participating schools to redeem vouchers and a structure and process for resolving disputes between schools and families. A public agency might be responsible for determining compliance of participating schools with requirements regarding admissions (e.g., a lottery system for over-subscribed schools), curriculum, and pedagogy. Further, if voucher amounts are to vary with some measure of educational need, a mechanism would be needed to verify these differentials.

Although market choice in education is sometimes touted as a cost-reduction option, the regulation of a market choice system could be comparatively costly (Levin, 1991). In the public school system, economies of scale arise because local districts operate and monitor public schools under state law. The regulation of a voucher system, on the other hand, would require state oversight at the individual school level. Indeed, some aspects of a voucher pro-

gram would necessitate oversight at the level of individual students. For example, given compulsory attendance laws, a voucher system would require the state to determine whether each student is enrolled in an approved school. Further, in an individualized voucher scheme, the state would assess the educational needs of each child and determine the corresponding voucher amount. Some proposals would award different vouchers according to grade level, curriculum, bilingualism, special needs, variations in local costs, the need to encourage racial desegregation, and other factors. Other potential costs of a market, as opposed to a public, choice program are a more customized transportation system and greater centralization of financial and program administration as the state works directly with families and schools as opposed to local school districts.

The trade-off between efficiency costs, arising from the differences between consumer preferences and actual consumption of education, and administrative costs is depicted graphically in the figure below.



As Levin (1991) notes, the market approach provides greater efficiency (i.e., a closer fit between consumer preferences and consumption) by providing families with a greater range of educational choices. However, these efficiency gains are associated with higher administrative costs, as the state deals with individual families and schools directly, foregoing the economies of scale that can be exploited when dealing with school districts. The important point is that these administrative costs do not represent bureaucratic frills; if government does not make these expenditures, too few parents will participate in the choice program to generate the greater efficiencies that come with matching parent desires for their children with appropriate school programs. Detailed cost comparisons of actual versions of market and public school choice with the existing system are required to determine the lower-cost alternative.

Supply-Side Incentives for Educational Entrepreneurship. Most discussions of educational choice focus on the practice and consequences of allowing consumers to choose their children's schools; that is, attention is focused on the demand side of a newly created and regulated market in educational services. Some observers argue persuasively, however, that simply increasing demand-side choice without providing educators the resources and latitude to

offer new educational alternatives—that is, without addressing the supply side of the educational market—will inevitably fail to lessen consumer dissatisfaction with the public schools (see, for example, Elmore, 1990). A policy that encourages parents and students to choose among educational programs that vary little in content and pedagogy and over which educators at the school level exercise little control is unlikely to yield the educational innovation and improvement envisioned by choice advocates. Rather, states that adopt educational choice in any form have a responsibility to allow educators to prepare and organize themselves in new ways and to offer new and innovative educational programs in response to consumers' increased ability to choose. Choice strategies will succeed in improving educational outcomes only if they address both sides of the "education market."

Supply-side strategies undertaken by various states have included the creation of second-chance programs that permit students who have failed in secondary school, or dropped out, to enroll in alternative public education programs. Other states have encouraged the creation of mini-schools, or schools within schools, to increase educational options for families.⁷ Just as several business firms may share one building, so too can several schools. Mini-schools are an especially attractive option in urban areas where public elementary and secondary schools

⁷ Perhaps the most well-known of these alternative school choice programs is the one instituted in Community District 4 in East Harlem, on the upper east side of New York City. Since 1973, the district has formed more than 20 alternative programs which offer parents a wide choice of educational options. At the elementary level, most students attend their neighborhood school, although many choose to attend an alternative school. At the junior high level, all students and their parents participate in a formal school selection process. While high schools are formally administered by the citywide Board of Education, District 4 runs two high school alternative programs under an agreement with the board.

In creating these alternative programs, District 4 leaders have broken the correspondence between buildings and schools. Several programs, usually embodying different educational approaches and different age groups, are housed in the same building. Uses of staff time and grouping practices within alternative programs are often quite flexible.

are often large. Evidence also suggests that large schools negatively affect student participation and achievement, especially among students from low socioeconomic families (Chambers, 1981; Holland & Andre, 1987).

In addition to these efforts, other strategies, collectively known as school restructuring, may provide an important source of inspiration and guidance for school change. These strategies for school-based rather than state-mandated change draw on existing research into the production of educational outcomes that has been largely unsuccessful at identifying the resources, programs, and strategies (i.e., the schooling "inputs") that dependably contribute to improved learning at all times and places.⁸ School restructuring encourages the use of ideas that have not been generally observed as effective in all circumstances but that display an internal logic and some localized evidence of success.

The more organized versions of these efforts offer new choices to educators, parents, and students. Examples of such ongoing efforts include the Success for All program based at the Center for Research on Effective Schooling for Disadvantaged Students at Johns Hopkins University, the Accelerated Schools concept developed by Henry Levin and colleagues, the Coalition of Essential Schools initiative organized by Ted Sizer, and James Comer's ideas for improving the psychosocial development of students. Other efforts include The Paideia

Program, John Goodlad's National Network for Educational Renewal, and the Professional Development Schools of the Michigan Partnership for New Education, based at Michigan State University.

While these efforts differ in substance, they all involve the implementation of ideas coming from effective schools research, organizational theory, or elsewhere about what needs to be done to improve schools. As such, they provide educators with not only new choices but guidance as to implementation. States seeking to introduce choice into their educational systems could include fiscal incentives in the form of planning and implementation grants for schools to participate in such programs as a way of developing new approaches to instruction.

These additional costs of supporting innovation help school choice programs attract sufficient participants and deliver more effective instruction. While supply-side incentives may be especially important at the beginning of a choice program, there may be a continuing need to stimulate school modification as the clientele of a school changes or opportunities for enhanced instruction develop. Thus, up to a point, these incentives are necessary investments in the success of school choice. And like demand-side supports, these supply-side incentives must be evaluated for their contribution to the economic goal of choice, the maximization of public and private benefits of education.

Alternative programs are typically led by "directors" rather than principals, because the scale of the program is smaller and the director can serve as both teacher and administrator. These and other departures from the traditional school structure permit more adult/student interaction, more attention to individual student learning, and more agreement among staff, parents, and students about academic content and expectations of the program. For further discussion, see Elmore (1990).

⁸ Pessimistic assessments of the contributions of the "education production function" literature abound. Hanushek's 1986 review is representative. For a more recent survey, and somewhat more optimistic view, see Monk (1992).

Costs of Instruction

Many of the arguments for school choice emphasize the potential of such programs to reduce the costs of instruction or to deliver better services at current cost levels. After all, schools that must compete for their students have built-in incentives to satisfy parents. But two other phenomena may actually cause the costs of instruction borne by the public to increase. The first arises from the possibility that successful choice programs may lead to the public financial support of the education of more students or expanded educational services. The second arises from the possibility that choice programs may encourage the proliferation of smaller schools.

Choice and Aggregate Public Educational Expenditures. In 1990-91, approximately 5.2 million K-12 students attended nonpublic schools. Given an average public school per-pupil expenditure of \$5,748 for that year, taxpayers enjoyed a private subsidy of approximately \$29.9 billion for K-12 education (U.S. Department of Education, 1992). School choice could increase the number of these private school students educated at public expense.

Under a voucher program, total public spending could rise as public funds flow to private schools. At the same time, however, such an increase in public spending could be partially or wholly offset by students leaving public schools for less costly private alternatives. This lower average per-pupil expenditure in private schools is likely attributable to several factors, including lower teacher salaries and,

oddly enough, the economic inefficiency of private schools.⁹ Lower costs in a market system may arise from two sources, either greater efficiency in the utilization of resources or a failure of the market to deliver a sufficient supply of a good. Voucher proponents have tended to emphasize the former explanation of lower private school costs; however, underinvestment in education is likely to be an important factor as well. As we have noted, in a market-based system, consumers overlook the external benefits of education when they make decisions about the amount and type of education to purchase. As a result, the lower costs of private schools may arise in part from their failure to supply educational services that benefit the public but not individual parents or children. Under an unregulated voucher system, students who leave the public schools for less costly private schools may, then, actually increase the inefficiency of the educational system from the public perspective. As Monk (1990) observes, it is possible to address this tendency to underinvest in education within the voucher framework. By lowering the price of education faced by individuals, it is possible to induce families to acquire more education (or education of a different type) than would otherwise be the case. The price of education faced by families can be lowered by making the vouchers larger. Or the voucher can be made larger for particular fields of study. But either of these solutions has the effect of raising the public cost of the voucher system.

In the case of expanded public choice, public K-12 spending would rise if students leave private schools for public schools. This would occur if parents find public schools to be more

⁹ In 1987-88, average base teacher salaries were \$16,562 in private elementary and secondary schools and \$26,230 in public schools (U.S. Department of Education, 1992).

attractive as public school educators respond to supply-side incentives to restructure existing public schools or organize new ones.

In sum, choice programs can increase public costs of instruction in one or both of two ways—by increasing the number of children educated at public expense and by increasing the cost of private schooling to cover educational services that benefit the public but are not now demanded by private school parents. From an economic standpoint, these increased costs are not necessarily a bad thing since they tend to maximize the total public and private benefits of education. But, as we have also seen in our discussion of the operating costs of choice systems, policymakers need to realize that the full exploitation of the potential benefits of choice may actually increase the public budget for education.

Costs of Smaller Schools. School choice programs may encourage the proliferation of relatively small schools that may forego some economies of scale enjoyed by relatively large public schools. That is, average per-pupil costs may rise as school size falls. At the school level, economies of scale will occur through better utilization of teachers, other instructional and non-instructional personnel, and physical resources. A large body of empirical research has concluded that schools of a larger size can operate at lower per-pupil costs, other things being equal. The "optimal" school size varies from study to study, depending on the nature of the sample and the size measure used (e.g., enrollments, size of staff). Most published U.S. studies concern high schools. Examples of optimum school size are 1,500 pupils in average daily attendance for Iowa high schools (Cohn, 1968); 1,675 for Wisconsin high schools (Riew, 1966); 2,244 for Missouri high schools (Osburn, 1970); and 2,432 for unit districts, 874 for high

school districts, and 336 for elementary districts in Illinois (Hickrod, 1975).

These findings, however, should be interpreted with caution. First, the studies fail to control statistically for variation in educational outcomes. Second, the studies are dated. Much progress has been made in recent years in the measurement of educational outcomes (i.e., "education production") and, as Cohn and Geske (1990) argue, much work remains to be done to develop production and cost models that are consistent with accepted economic and educational theories. These models then need to be tested with reliable cross-section and time-series data. Replication of empirical results is important in light of the conflicting results of past studies.

Here, too, increased costs that arise from smaller schools may not necessarily be a concern from the economic point of view. As already noted, some research suggests that higher levels of student achievement are associated with reductions in school size. Nevertheless, such size reductions may be yet another way in which the public budget for K-12 education may actually increase under choice.

III. SCHOOL FINANCE ISSUES UNDER SCHOOL CHOICE

Programs of school choice may be statewide or local in scope. The greatest challenge in financing school choice is posed by those programs that entail the movement of pupils across local district boundaries, but each model raises its own fiscal issues. Generally, school choice raises three kinds of financing issues—issues about the distribution of general school funding, taxation, and categorical funding.

General Funding Distribution Issues

In most states, public fiscal support for schools is calculated by multiplying the number of students served by a school district by a funding factor. This practice of paying for schooling by the student ignores a number of important realities about the costs of operating schools. For example, almost all instruction takes place in classroom groups; therefore, the actual personnel costs of adding a single student to a school are close to nothing. However, the costs of adding fifteen or twenty students are very real since they may require the hiring of an additional teacher. Similarly, overhead costs for such things as buildings, administration, and transportation are not significantly changed by the addition or subtraction of a few students.

Because the state pays for the education of large numbers of students in a school district, ignoring these realities usually does not work a hardship on schools since districts can shift funds from school to school or change school attendance districts to compensate for such problems. If parents have chosen a particular school, however, districts do not have the flexibility to solve these problems that they had in the past. Furthermore, if public funds are used to support private education, the district or the state will be expected to contribute tuition expenses for each student educated. Thus, an important issue is how the current system of distributing funds to schools should be modified to accommodate the realities of school costs and at the same time to provide schools with an incentive to participate actively in the choice system.

To the extent that funding distribution is considered by choice advocates, it is generally assumed that funding should follow the student. But this solution is not obviously correct. As noted, actual school costs are incurred largely

on a per classroom basis rather than a per student basis. The marginal cost of educating an additional student may be negligible in most cases (and would certainly be so if choices are restricted by seat availability), while the marginal cost reduction of losing a student is likewise near zero.

Thus, one could argue that a choice program in which revenue (however calculated) follows the child provides a windfall for the receiving school and an unfair loss to the sending school that will exacerbate the quality differences between the schools and encourage further transfers. Eventually, however, a sufficient accumulation of transfer students would necessitate additional resources in the receiving district if program quality is to be maintained. (Again, such an accumulation of transfers would presumably be possible only if choice is not limited by seat availability.) However, a failure to reward or punish schools financially based upon the choices that parents make may give schools little interest in attracting new students or little incentive to improve their programs to meet the demands that parents of current students make of them.

These microeconomic issues have elicited mixed responses from states. At least 14 states—Arkansas, California, Colorado, Idaho, Iowa, Massachusetts, Minnesota, Missouri, Nebraska, Ohio, Oregon, Utah, Washington, and Wyoming—have some type of interdistrict open enrollment programs. California limits choice to the school in the district in which the parent either lives or works, while Ohio limits choice to schools in contiguous or bordering school districts. No such limitations are imposed by the other states; students may select any public school in the state.

The general tendency among these states is to allow basic total state plus local per-pupil funds (excluding categorical funds) to follow

the child. The sole exception is Arkansas, where only state aid follows the child.¹⁰ States differ, however, in the definition of "full-base" funding. For example, Ohio provides that an amount equal to the state foundation per-pupil revenue adjusted by the sending district's cost-of-doing-business index follow the student, while in Iowa the lower of either the sending or the receiving district's base per-pupil revenue follows the child. Again, such arrangements can easily provide a fiscal hardship for the sending district and a windfall for the receiving district if transfers are limited to space available.

A particularly controversial version of full-base funding provides that an amount equal to the per-pupil revenue of the receiving district follow the child. Such a plan can be problematic because students who select schools outside their home district may often be attracted to schools in districts which outspend the home

district on a per-pupil basis. When Massachusetts passed a law permitting open enrollment among districts electing to participate, local districts with large concentrations of low-income families found themselves compelled by law not only to forgo their local base per-pupil funding for exiting students but to pay additional subsidies to higher spending and much wealthier neighboring school districts.¹¹ In its first year of operation, 1991-92, the Massachusetts plan made the sending district responsible for the full per-pupil cost of educating the student in the receiving district, regardless of the size of the per-pupil spending differences.¹²

States with power-equalizing funding systems—systems that guarantee that districts with the same property tax rates have the same per-pupil expenditures—may not face some of these problems. Because such systems concentrate state aid on districts that have low property

¹⁰ In Colorado, state law initially provided that only 85% of the sending district's base per-pupil revenue follow the pupil. When, partly as a result, no districts elected to participate, the program was modified to allow all base per-pupil revenue to follow the child. Colorado's interdistrict choice plan will be phased in at the rate of three school districts per year. Districts must apply to participate in the program. At the end of five years, the Colorado legislature will decide whether or not to institute a statewide mandatory program.

¹¹ For example, Gloucester, a relatively poor district north of Boston, spent approximately \$4,500 per pupil in 1991-92, while its wealthier neighbor, Manchester-by-the-Sea, spent about \$7,700. Under the choice program, Gloucester lost 77 of its 3,700 pupils to Manchester in 1991-92. For each one, Gloucester lost and Manchester gained the full \$7,700 in state aid, yielding a substantial loss for Gloucester and a windfall for Manchester. The Massachusetts law also phased out an existing interdistrict tuition program. Forty-eight of the 77 students who "open-enrolled" from Gloucester to Manchester in 1991-92 had already been attending Manchester schools, with the parents paying Manchester \$3,500 in tuition. Under the open enrollment program, the tuition cost shifted from the parents to the Gloucester school district and rose from \$3,500 to \$6,500.

In response to these hardships imposed by the choice program, the Massachusetts legislature has since appropriated \$2.7 million in one-time, emergency aid for adversely affected districts and has capped the amount of revenue gained by a receiving district at \$5,000 per pupil. Further, districts losing pupils are reimbursed 75% of their losses by the state. A transportation subsidy, however, was not approved. According to a study conducted for the legislature, reimbursement of transportation costs incurred by participants in the open enrollment program in 1991-92 at the state employee rate of 22 cents per mile would have totalled approximately \$1.7 million (Fossey, 1992).

¹² Participation in the Massachusetts plan is voluntary in the sense that a district can choose not to accept nonresident students. However, no district can deny students the freedom to leave. In 1991-92, only 32 of the state's 361 districts opted to participate.

wealth, students who transfer from low-wealth to high-wealth districts will not receive much if any additional state assistance. But such power equalizing systems still reduce state aid to low-wealth districts that lose students through choice.

A more general solution to the problem discussed in this section is the "classroom unit" or "teacher unit" finance model. With this model, which of course can be implemented with or without a choice program, a school or district with a growing enrollment would not receive additional funding until it adds enough students to require the addition of a teacher. Similarly, a school or district with a decreasing enrollment would not lose funding until it loses enough students to reduce the size of its teaching staff. These threshold levels of enrollment change would be set by formula and could be adjusted by pupil weightings to compensate for cost differentials across rural, suburban, and urban communities, grade levels, and pupil categories (e.g., special education pupils, compensatory education pupils). Such a solution avoids the payment of a state aid windfall to the receiving districts or unfair state aid reductions for sending districts. Ideally, the formula might also take into account funding for overhead costs, costs for building maintenance and administration that are not dependent on changes in enrollment. Potentially, a state-aid formula that responds to the real cost effects of choice is very complex.

Taxation Issues

While finance schemes might be designed to pass muster in distribution, they also raise issues of aggregate expenditures and taxpayer equity. That is, if states permit localities to set their own level of taxation and expenditure for

schools, choice will give parents an incentive to live in a low-tax district (or to vote for low taxes in their district of residence) and send their children to a high-expenditure district. First, this incentive could have the effect of reducing overall public expenditures on education, particularly from local sources. This incentive applies to all parents, whether they currently live in high- or low-expenditure districts. Parents who send their children to schools in other districts or to private schools do not have an incentive to support local schools. Parents who send their children to local schools might resist additional locally supported costs imposed by children who come from other districts. In either case, choice could give parents and other community members a reason to reduce local expenditures for education.

Second, choice could exacerbate taxpayer inequities. At present, property tax rates generally differ considerably from district to district within a state. But at least those levels of taxation are subject to control by local residents who are most immediately affected by the quality of schools. Parents who send their children to a school in another district have no say in the expenditure levels of that district because they have no vote in school board elections or spending referenda for that district. Under choice, then, levels of taxation could be determined to a greater extent than at present by those who do not necessarily have the greatest stake in the educational system.

The difficulties just described can be seen as a fundamental incongruity between a school-based choice program and a district-based finance system. Odden (1991) has proposed a two-tier, school-based finance structure designed to maintain pupil and taxpayer equity in an interdistrict or market choice system.

The first tier would provide equal base per-pupil funding for all pupils in the state; it is, in

effect, a foundation formula. The level of this base funding would be sufficient to ensure that all students attain the state's performance goals. Presumably, this tier would be funded largely or exclusively from state tax sources.

A second tier would provide individual schools with the opportunity to exceed the foundation spending level. The funding of this tier would be based on the individual income tax, not the district property tax.¹³ That is, the income tax would be used to give parents in local schools the choice to spend above the foundation level. Parents of children enrolled in a public or participating private school would have the option of exceeding the foundation level of spending by a majority or super-majority vote.¹⁴ Specifically, all parents of children in any particular school could vote on whether to impose an income tax surcharge on all parents at the school.¹⁵ The state would then equalize the yield on the surcharge across schools in the same way many states now equalize the yield on local property taxes across districts by means of

a power-equalizing or guaranteed-tax-base formula. That is, the legislature would establish a schedule of per-pupil revenue yields for the allowable range of income tax surcharges.

Odden (1991) points out several attractive features of this proposal. First, low-income households would be protected from paying the tax surcharge to the extent that such households are exempted from the state income tax. Second, state equalization of the surcharge levied at each school would provide a fiscal incentive for parents to increase their school tax effort. As with any district power-equalizing or guaranteed-tax-base formula, voter response to the fiscal incentive (or "price effect") of matching state aid depends upon the voters' price elasticity of demand.¹⁶ Third, in the lexicon of school finance, this plan would include the complete recapture of "excess" local revenue. That is, in the case of a school for which aggregate income per pupil exceeds the state guarantee level, the school's revenue per pupil would be limited by the state to that guarantee level, and the "ex-

¹³ As Odden (1991) notes, the financing of differential spending levels across schools by means of the property tax is impractical and likely prohibited by law. Most states require uniformity of tax rates within property tax jurisdictions, thus precluding the possibility of differential property tax rates across parcels within a school district. Generally, such differentials result from tax abatement programs that remove parcels, in whole or in part, from the ad valorem property tax rolls. Such an approach would be impractical in this context. Individual income tax differentials are more common. For example, many states use circuit breaker programs to provide property tax relief in the form of income tax credits to individual households. Further, a number of states have enacted various forms of individual income tax surcharges.

¹⁴ In California, for example, Proposition 13 requires a two-thirds majority vote to raise taxes.

¹⁵ The administrative mechanics of such a school-based tax need not be overly burdensome, particularly for any state in which income tax returns are already coded by school district (for example, in connection with a circuit breaker property tax relief program). Once the surcharge is approved by the school parents, the school would certify the result to the state and list all parents and their social security numbers. The state would then notify all parents of their income tax surcharge. The surcharge on any single household could be capped at, say, 10% and could apply to all households regardless of the number of children they have in public school. For families with children in more than one public school and paying the maximum surcharge, the school tax could be divided proportionately among the children's schools.

¹⁶ A matching aid formula offers to match each dollar of the recipient's expenditure with a certain amount (m) grant dollars, so m is the matching rate. Thus, the share of total expenditure financed by the grant (denoted by M) is $M = m/(1+m)$, and the local tax price (denoted by P) of an additional dollar of services is $P = 1 - M = 1 - \{m/(1+m)\} = 1/(1+m)$.

cess" revenue would be distributed to less wealthy schools through the equalizing formula.¹⁷ Fourth, these funds, along with the state foundation funds, would be entirely discretionary at the school level. Such an arrangement would support site-based decision making as to program planning and budgeting. Finally, this second tier of school spending would complete the choice framework by giving families the opportunity to select not only the school their child will attend, but also the quality of educational programming in that school. As Odden (1991) notes, this school-based income tax surcharge approach is entirely compatible with any model of public school choice, including intra-district open enrollment, magnet schools, or mini-schools. It could also be made consistent with a voucher plan.

The two-tier funding approach, in which all taxpayers support a common core educational program for all students and parents pay for supplements to the core in the schools their children attend, fits nicely with the dual public and private ends of education described above. Ideally, the first tier of financial support would be sufficient to provide children of differing racial and socioeconomic origins the education needed to function effectively in a competitive market economy and a participatory democracy. This would suggest a relatively high foundation funding level. The level of second-tier funding, of course, would vary across schools, reflecting the preferences of each school's parents. A political question arises as to whether the state would impose a maximum per-pupil expenditure level on schools. Given the likelihood that the highest-spending schools in a

system such as this would have high income parents and in view of the ability of states to extract recaptured funds from such parents and redistribute those funds to all schools through the two-tier formula, legislators may be inclined to dispense with any spending limit or set it at a very high level.

Categorical Funding Issues

At present, state aid earmarked for particular programs or student populations (e.g., compensatory education, programs for gifted and talented students) rarely follows the child in interdistrict choice programs. Whether it should or not would seem to depend upon the statutory basis for each individual program. In some instances, however, statutory intent is unclear. In the absence of interdistrict choice, state or federal funding sources have sometimes failed to clearly distinguish between categorical funding for educationally disadvantaged students and funding for schools or districts serving high concentrations or proportions of such students. Under choice, however, it is important to clarify the intent of such programs since the funding intended for disadvantaged students should follow the student to a school of choice and funding for disadvantaged schools should not.

Odden (1991) notes, for example, that federal Chapter I funds for compensatory education flow to local districts according to the number of low-income children residing in the district. Within districts, however, funds are allocated on the basis of students' educational,

¹⁷ In microeconomic terms, the marginal tax price of school expenditures for high-income parents would be greater than one. That is, in order to increase per-pupil expenditures in their school by one dollar, affluent parents would have to increase their school tax payments by more than one dollar per pupil.

not economic, needs. If a Chapter I child living in a low-income urban district elects to leave that district to attend a school in a more affluent suburban district that does not qualify for Chapter I funding, should that child retain eligibility for the categorical funding? Clearly, the educational needs of the child are not lessened by the transfer. At the same time, however, the child would not qualify for Chapter I funding if he or she lived in the suburban district. If the funding were to follow the child to the suburban district, would not the principle of horizontal equity require that *all* children in the suburban district with the requisite educational need be funded, regardless of the income level of the district?

In contrast, federal special education statutes clearly identify the individual student as the object of funding. All children identified as needing special education services must receive them regardless of their district or school of attendance.

To resolve this dilemma, Odden (1991) suggests that the student simply be counted in the district of attendance for purposes of categorical funding.¹⁸ In this way, district and school attendance determines eligibility for categorical funding. Such a scheme would generally mean that a student who leaves a low-income district for a school in a more affluent community would forfeit eligibility for those categorical funds distributed by formula to schools or districts rather than students. However, the environment and programs of the more affluent school might more than compensate for the loss of program eligibility. Further, such transfers could result in greater per-pupil categorical funding for those remaining in the neighborhood school. For student-based categorical programs such as federal (and, in some cases, state)

special education, aid would follow the child to the school of attendance. In view of the possibility that significant numbers of academically needy students may transfer to schools in communities with relatively low numbers of such students, state and federal authorities may have to clarify, in some cases, whether categorical programs are intended to assist disadvantaged students or disadvantaged schools.

A FINAL WORD

The recent public interest in school choice can be viewed as part of a broader movement toward entrepreneurship in elementary and secondary education. As one part of a multi-faceted strategy to create incentives to improve school performance, choice and its attendant finance issues are seen as an interesting and integrated approach to allocating educational resources so as to create new and restructured schools and more options for students.

When choice is limited to existing schools, financing schemes are generally reduced to one of three unsatisfactory compromises: (1) interdistrict choice plans in which it is difficult to make funding accurately reflect the real between-district costs of choice; (2) intradistrict public choice plans in which choice is limited but between-district cost problems are avoided; and (3) severely restricted market choice plans in a few jurisdictions in which the number of participating students is so limited that cost problems are negligible. Further, in the absence of supply-side strategies to encourage educational entrepreneurship, the economics of school choice is reduced to a rationing of slots in desirable schools, resulting in a disequilibrium

¹⁸ This is the policy in Arkansas, California, Colorado, Idaho, and Washington.

of shortages and surpluses that does little to improve either economic welfare or educational outcomes.

If a state accepts the premise that supply-side strategies, including charter schools, restructured schools, and various public choice models, are essential if choice is to succeed as an educational strategy, then the state should incorporate in its school finance system a fiscal incentive for such supply-side efforts, including planning and implementation grants for school restructuring and start-up funds for charter schools to supplement operating revenues that would follow the students. Viewed in this broader context of fostering educational entre-

preneurship, the financing of public school choice can extend beyond the unsatisfactory political compromises reached by states that have grafted school choice programs onto district-based finance systems to include more flexible incentives for educators to create new educational choices in every community. Such fiscal incentives would generally be supplemented by state policies promoting devolution of decision-making authority and freedom from regulatory control so as to enhance the opportunity of educators to design and initiate programs to compete for the fiscal rewards and avoid the fiscal sanctions of educational choice.

REFERENCES

- Brown, B. W. (1992). Why governments run schools. *Economics of Education Review*, 11(4), 287-300.
- Chambers, J. (1981). An analysis of school size under a voucher system. *Educational Evaluation and Policy Analysis*, 3, 29-40.
- Chubb, J. E., & Moe, T. M. (1990). *Politics, markets, and America's schools*. Washington, DC: Brookings Institution.
- Cohn, E. (1968). Economies of scale in Iowa high school operations. *Journal of Human Resources* 3, 422-434.
- Cohn, E., & Geske, T. G. (1990). *The economics of education* (3rd ed.). Elmsford, NY: Pergamon.
- Coons, J. E., & Sugarman, S. D. (1978). *Education by choice: The case for family control*. Berkeley, CA: University of California Press.
- Elam, S. M., Rose, L. C., & Gallup, A. M. (1991, September). The 23rd annual Gallup poll of the public's attitudes toward the public schools. *Phi Delta Kappan*, pp. 47-56.
- Elam, S. M., Rose, L. C., & Gallup, A. M. (1993, October). The 25th annual Gallup poll of the public's attitudes toward the public schools. *Phi Delta Kappan*, pp. 137-152.
- Elmore, R. F. (1990, December). *Working models of choice in public education*. New Brunswick, NJ: Center for Policy Research in Education.
- Fossey, R. (1992). *School transportation and school choice in Massachusetts: A report to the legislature submitted by the commissioner of education*. Cambridge, MA: Harvard University Graduate School of Education.
- Friedman, M. (1955). The role of government in education. In R. A. Solo (Ed.), *Economics and the public interest* (pp. 123-144). New Brunswick, NJ: Rutgers University Press.
- Gramlich, E. M., & Koshel, P. P. (1975). *Educational performance contracting*. Washington, DC: Brookings Institution.
- Hanushek, E. A. (1986). The economics of schooling: Production and efficiency in the public schools. *Journal of Economic Literature*, 24, 1141-1178.
- Hickrod, G. A. (1975). *Cost-size relationship among school districts in Illinois, 1974* (Research Paper 2-HCYH-75). Normal, IL: Center for the Study of Educational Finance.
- Holland, A., & Andre, T. (1987). Participation in extracurricular activities in secondary school: What is known, what needs to be known. *Review of Educational Resources*, 57, 437-466.
- Kolderie, T. (1992, January 26). Charter schools. *The New York Times*, sec. 4, p. 17.
- Lawton, M. (1992, September 23). Gallup poll finds wide support for tuition vouchers. *Education Week*, pp. 1, 16.

Levin, H. M. (1980). Educational vouchers and social policy. In R. Haskins & J. Gallagher (Eds.), *Care and education of young children in America* (pp. 103-132). Norwood, NJ: Ablex.

Levin, H. M. (1991). The economics of educational choice. *Economics of Education Review*, 10(2), 137-158.

Monk, D. H. (1990). *Educational finance: An economic approach*. New York: McGraw-Hill.

Monk, D. H. (1992). Education productivity research: An update and assessment of its role in education finance reform. *Educational Evaluation and Policy Analysis*, 14, 307-332.

Odden, A. (1991). *A new school finance for public school choice*. Unpublished manuscript, University of Southern California, Center for Research in Education Finance.

Olson, L. (1993, October 6). Vouchers' impact on Calif. schools tough to predict. *Education Week*, pp. 1, 16.

Osburn, D. D. (1970). Economies of size associated with public high schools. *Review of Economics and Statistics*, 52, 113-115.

Riew, J. (1966). Economies of scale in high school operations. *Review of Economics and Statistics*, 48, 280-287.

U.S. Department of Education. (1992). *The condition of education, 1992*. Washington, DC: U.S. Government Printing Office.

Williams, S., & Buechler, M. (1993, January). *Charter schools* (Policy Bulletin No. PB-B16). Bloomington, IN: Indiana Education Policy Center.

Copies of this report are available
for \$7.50, including postage and handling.
Payment must accompany order and be payable
to Indiana University. Educational and bulk
discounts are available on request.

Contact the Indiana Education Policy Center
School of Education Office
Smith Center for Research
in Education, Suite 170
Indiana University
Bloomington, IN 47408-2698
(812) 855-1240

